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Citizens' Bulletin

Volume 10 Number 11 July-August 1983 \$5/yr.
The Connecticut Department of Environmental Protection

The Nature Conservancy
has saved some of the
State's most beautiful land

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Citizens' Bulletin

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Volume 10 Number 11

\$5/yr.

Cover Photo: TNC preserve at Chimon Island:
George Bellerose

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DEP Citizens' Bulletin
(USPS 041-570)

Published eleven times a year by the Department of Environmental Protection. Yearly subscription \$5.00; two years, \$9.00. 2nd class postage paid at Hartford, Connecticut. Funds are also provided through a federal grant from the Office of Coastal Zone Management under the Coastal Zone Management Act of 1972. Please forward any address change immediately.

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Open house

By Susan Subak,
Environmental Intern

For the first time this year the Chase House at Topsmead State Forest will be open to visitors weekends and holidays throughout the summer.

The attractive English Tudor summer home will be open to the public from 10:00 a.m. to 4:00 p.m., Saturdays, Sundays, and holidays from June 4 through Labor Day.

In order to get the full benefit of a tour visitors may stop by the carriage house to view an audio-visual presentation before touring the main house. The presentation answers many questions about the design and construction of the house and DEP personnel will be available inside the house and on the grounds to answer additional questions.

The State of Connecticut acquired the 511 acre Topsmead estate as a bequest from the late Edith M. Chase in 1972. Located atop a 1,230 foot knoll two miles east of Litchfield

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."

off Route 118, it commands a magnificent view of the surrounding countryside.

Henry S. Chase, first president of Chase Brass Company of Waterbury, had a hunting lodge on the site of the present home. Shortly before his death, his daughter, Edith Chase, acquired the original 16 acres. That was in 1917, and she added additional acreage periodically until her death in 1972.

In addition to the Tudor style home, Topsmead State Forest includes the 40 acre Edith M. Chase Nature Trail and Wildflower Preserve, dedicated to the memory of Miss Chase's generous gift to the people of Connecticut. Several miles of hiking trails are also included.

Anyone seeking further information on Topsmead State Forest or tours of the Chase home should contact the forest office at 567-5694.



Susan Subak

TNC goes after choice land parcels on the open market

By Leslie Bieber, Citizen Participation Coordinator

If some environmental groups were compared to business or industry in their operation, the idea would be rejected by them as anathema. One organization, however, embraces the concept whole-heartedly. The Nature Conservancy employs the techniques of the free-enterprise system to preserve areas of unique or critical ecological significance.

The Nature Conservancy (known as TNC) has its roots in the Ecologists' Union, a turn-of-the-century group of scientists dedicated to preserving ecological conditions. Connecticut was practically TNC's birthplace in 1954, as concerned scientists like Dr. Richard Goodwin of Connecticut College and others worked to make their first purchase at Mianus River Gorge in Westchester County, New York. A volunteer committee raised the funds through private donations and a foundation grant and the concept of the Nature Conservancy was born.

Today TNC is a national organization with field offices and chapters all over the country. The Connecticut Chapter,

which has its headquarters in Middletown, was one of the first state chapters to be established. Over 5,000 people are on TNC's Connecticut membership roll.

The Chapter's Executive Director is W. Kent Olson, who heads a small, energetic professional staff. Olson explained TNC's basic goals as an organization, calling it a "laser beam focus" to:

- 1) identify areas of high environmental significance, such as endangered species habitats or unusual ecosystems;
- 2) acquire the areas either through gift or purchase;
- 3) manage those lands acquired and kept by the Conservancy.

To this end, Olson said that the Connecticut Chapter is in a transition phase. "We are moving from opportunism, where we took any land given to us, to a process of identifying areas of critical importance. In conjunction with the DEP we have been inventorying the State for rare species, ecosystems, community types, habitats, and areas of unusual

biological richness. This process means we may have to bargain more with owners, especially those who might be unwilling to sell."

This is where the Conservancy's businesslike attitude comes to the fore. Instead of relying on public advocacy to obtain choice parcels of land, TNC goes after them on the open market and through direct dealings with the owners. Although they sometimes have to pay full market value, Conservancy officials can usually purchase property at "bargain sale" prices because of the tax advantages to the seller. Most of the staff members are well-versed in many aspects of real estate appraisal, tax law, and business management. That, says Olson, is why the Conservancy and the private sector work so well together.

The Nature Conservancy, unlike many environmental groups, does not actively lobby on issues or legislation. They prefer to spend their time and money on one objective, land preservation. Business interests tend to look favorably on TNC because no adversarial

relationships have been formed over the years.

Private industry has always been strongly supportive of the Nature Conservancy. On the national level, over 400 corporations contribute \$1,000 or more annually to become Corporate Associates. In Connecticut many of our major businesses are patrons of TNC (see box, p. 6). Olson credits executives like John Filer, Chairman of Aetna Life and Casualty, S. Bruce Smart, Chairman of the Continental Group, Donald W. Davis, Chairman of The Stanley Works, and Worth Loomis, President of Dexter Corporation, with helping move along many important local projects. When he is asked if corporate money isn't tainted in some way, Olson quotes Mark Twain and replies, "Right. T'aint enough!"

The Nature Conservancy has been and continues to be the recipient of several foundation grants. Earlier this year, the Richard King Mellon Foundation of Pittsburgh awarded TNC a \$25 million matching grant to purchase threatened wetlands across the country. The match can come through either state or private contributions; after purchase, the grant will be repaid through local fund raising efforts. In this way the grant funds will constantly be replenished so that important tracts of land can be protected.

Another grant awarded to the Conservancy comes from the Goodhill Foundation, which was endowed by the late Katharine Ordway, a Connecticut resident. Miss Ordway was a life-long conservationist who bestowed many gifts on TNC, including a major portion of the Devil's Den Preserve in Weston. The current \$5 million award, which must be matched by \$10 million from other sources over the next three years, will go toward safeguarding smaller areas of vanishing habitats that have national priority for protection. This program follows a previous Goodhill Foundation bequest of \$10 million, which established the



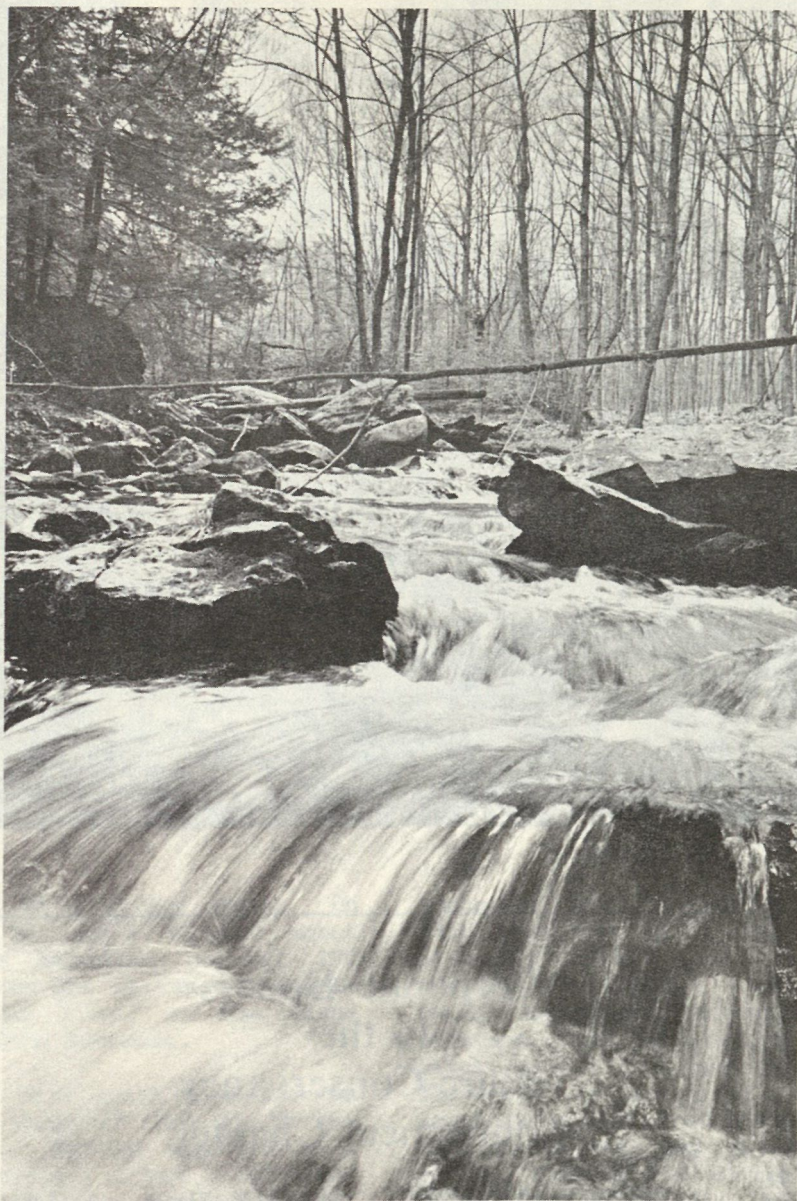
Lord's Cove in Lyme: George Bellerose photos

National Critical Areas Program (which focuses on large areas of threatened ecosystems).

Obviously the matching requirements of the grants mean that both the national and local branches of TNC do continuous fund raising. However, Olson points out that every \$1 donated over basic membership dues can save \$11 worth of land -- a healthy return on the investment. Besides, by having sizeable cash reserves the Conservancy can mobilize quickly to acquire environmentally prime lands. This ability has made possible the preservation of many unique and beautiful areas in Connecticut.

At present the Connecticut Chapter of TNC manages 62 preserves across the State. The areas, which range from towering stands of pine in the northern hills to fragile coastal salt marshes, are representative of many of the ecosystems and habitats which are rapidly disappearing. Wherever you live, there is certain to be a Conservancy property within easy reach. Most of the preserves are best described in Susan Cooley's book "Country Walks in Connecticut" which was published by TNC and the Appalachian Mountain Club.

Cooley is the Associate Director and Land Steward of the Chapter and has the job of



overseeing Connecticut's preserves. The small staff in Middletown cannot personally tend every area, but a network of concerned volunteers can. There are stewardship committees of about seven persons for each preserve; they do the brush clearing, sign posting, and general "warden" duties. Cooley noted that planning for the management of a site takes place well before its final acquisition.

The generosity of conservation-minded donors has been a major factor in the establishment of the preserves. Land has been donated outright or sold at below market value. If an owner wishes to retain the

property title, he or she can place the land under conservation easement, which guarantees that it will never be developed. Sometimes the Conservancy is the recipient of property which is not environmentally significant but which may have commercial value. In this case they will sell the land, with the owner's prior approval, and use the proceeds to purchase new areas. In other instances, open space gifts may be turned over to local land trusts or similar organizations. The Nature Conservancy, in cooperation with the Conservation Law Foundation, also established the Land Trust Service Bureau to help local land

trusts acquire and manage their properties.

Olson considers two recently acquired parcels of land, Chapman's Pond and Onion Mountain, to be among the most important holdings of the Connecticut Chapter. The story of Chapman's Pond, in particular, demonstrates not only TNC's tenacity when pursuing a goal but also its ability to pull diverse interests together to pursue a common cause.

Chapman's Pond is a 307-acre site located near the mouth of the Connecticut River in East Haddam. Home to birds of prey including osprey and bald eagles (in winter), the area is made up of forest uplands, bluffs, streams, marshlands, and open water. The site had long been a priority of both the DEP and the United States Soil Conservation Service (SCS) as it harbored at least 250 species of fish and wildlife as well as two plants found nowhere else in Connecticut.

Various organizations dedicated to conservation in Connecticut had been interested in the purchase of Chapman's Pond as long ago as 1973. The then-owner of the property was Vivian Kellems, a feminist and successful industrialist, who approached Commissioner Douglas Costle about the DEP's acquiring the land. Costle researched the ecological potential of the site and designated it as a priority for protection.

After Vivian Kellems died in 1975, the property passed to other members of her family and eventually to two nephews. When DEP fisheries biologist and East Haddam resident Steve Gephard heard that plans were being drawn up to turn the area into a subdivision and marina, he suggested to TNC's Connecticut Chapter that they look into acquiring the land. Throughout 1977 and 1978 TNC and the DEP explored various possibilities for purchase

Over the next two years the DEP and TNC negotiated with the owners. The asking price of \$1

Susan Cooley,
Associate
Director
and Land
Steward
for TNC,
looks for
birds at
Chapman's
Pond
in East
Haddam.



million was obviously one stumbling block; time constraints added to the difficulty of the situation. The property owners were still considering development plans which would have damaged the fragile ecosystem of the area. Finally, in December of 1981, TNC exercised a four-month purchase option. The search for the \$700,000 to acquire and manage the site began in earnest.

In February of 1982 Olson and chapter trustee Alexander Gardner, now president, appeared before the Connecticut River Gateway Commission to make a request for a \$300,000 grant. The answer had to be in by March 10, the last day that the option could be exercised. The award hinged on a decision by Mrs. Cynthia Carlson to drop an appeal of a DEP ruling allowing overhead power lines near her property. If she dropped her appeal, the Gateway Commission would be the recipient of a \$1 million settlement -- enough to make the grant to the Conservancy. In a truly unselfish gesture, Mrs. Carlson

Corporate Donors to the Nature Conservancy Connecticut Chapter

CORPORATE ASSOCIATES (\$1,000 OR MORE ANNUALLY)

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AMAX Foundation, Inc.
American Maize
Champion International
Corporation
Cigna Corporation
Dexter Corporation
General Electric Company
General Telephone and
Electronics Corporation
Kennecott Corporation
Olin Corporation Charitable
Trust
Perkin-Elmer Corporation
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Remington Arms Company, Inc.
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Companies
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CORPORATE SPONSORS (\$500 ANNUALLY)

Kaman Corporation
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Company

CORPORATE CONTRIBUTORS (\$250 ANNUALLY)

Hartford National Bank
and Trust Company



agreed to drop her case. On March 10, still \$51,000 short of the necessary amount, TNC exercised the option and legally bound itself to the Chapman's Pond Purchase.

At this point a number of "white knights" rode in to the rescue. Working together in a bi-partisan effort, Governor William O'Neill and Connecticut Senators Weicker and Dodd and Representatives McKinney and Gejdenson supported a Soil Conservation Service grant award of \$205,000 to TNC. With their aid and that of State Conservationist Philip Christensen, the agreement was signed on March 22. On June 13, 1982, The Nature Conservancy formally dedicated the Cynthia B. Carlson Nature Preserve.

The emphasis that the Connecticut Chapter will be placing on the critical areas program will continue to increase. For the past two years, TNC and DEP's Natural Resources Center have done preliminary work on an inventory of the State's resources. The 25 sites regarded as most

important will be prioritized with the help of a "natural diversity scorecard" which measures relative endangerment. As better information is obtained, the ranking of the sites on the list may change. The cost of acquiring these areas is estimated at around \$3 million; several may be eligible for funding from either the Mellon or Goodhill grants. Heading the Connecticut Critical Areas Program is David P. Warren, the newest executive on the Chapter's staff.

Scientific research is carried out at several of TNC's preserves so that each ecosystem can be protected and enhanced. In many cases student interns spend their summers gathering information on one particular aspect of an area. This summer students will inventory the flora and fauna at both Chapman's Pond and Onion Mountain; others will finish documenting easements on existing preserves. A third project, carried out in conjunction with the DEP and the New England Heritage Program, involves

studying Fairfield County to determine extant populations of rare and endangered species.

A relatively new undertaking is the Small Grants Program, which provides limited funding to scientists interested in researching Conservancy properties. The information will also be used to ensure effective management of the preserves. As Cooley said, the more data TNC staff people have on hand, the better they can be at locating species, protecting habitats, and managing resources.

The Nature Conservancy has proven that conservation of our natural resources can be an effort in which every segment of society can share. Members can take pride in the fact that they have had a part in saving some of the most wild and beautiful land in the State and in the country. If you are interested in finding out more about Conservancy membership, contact them at Box MMM, Wesleyan Station, Middletown, CT 06457, (203) 344-0716.

Nature Notes

Swallows . . .

By Penni Sharp

Summer in Connecticut is a good time to enjoy the outdoors and to try to learn about some of our native fauna. Some animals are readily observed at this time of year, and included among these are the swallows. These are the birds that fly so gracefully over lakes, ponds, and meadows. Rows of swallows are also seen lining telephone and electric wires.

As August approaches, swallows begin to congregate in large numbers along the wires, so they are easy to observe. Unlike many wild creatures, swallows generally thrive in the presence of man. They nest in his buildings, gravel pits, and bridges and perch along his wires. One species, the barn swallow, actually extended its range thanks to the westward movement of farming. Swallows should be welcome wherever they go as they consume enormous numbers of insects.

Acrobats of the air, swallows are agile fliers, twisting, turning, and wheeling with smooth and seemingly effortless motion. They belong to the avian family Hirundinidae which includes some 79 species. Their distribution is worldwide except for the Antarctic, insect-free parts of the Arctic, and a few oceanic islands.

North American swallows are migratory, leaving their breeding grounds in late summer through early fall to winter in the Southern United States and Central and South America. They return in the spring, usually with the first wave of warm weather which also brings the insects.

As a group, swallows are not particularly colorful birds. Some might consider them drab. The sexes are indistinguishable in most species. Swallows have short legs and small, rather weak feet. As a result, they are quite ungainly on the ground and have difficulty walking. For the most part, swallows are insectivorous and feed on the wing. The wide gape of their beaks is useful adaptation for gathering insects in flight. Long cold spells during which insect populations crash can be devastating to swallows, particularly those which are wholly dependent upon insects for food.

Of all the swallows seen in Connecticut, the barn swallow (Hirundo rustico) is perhaps the most familiar. Barn swallows are prevalent wherever there are good habitat and nesting opportunities. In pre-settlement times, these birds used rock ledges or perhaps tree trunks sheltered by large branches as nest sites. Now, barn swallows nest almost exclusively on rafters or ledges in barns, sheds, and abandoned buildings or under bridges.

The barn swallow is a sleek, blue-black bird with a deeply forked tail. Underneath, it is a creamy buff color, and it has a rusty throat and forehead.

Returning to Connecticut in the spring, barn swallows set about rebuilding old nests or fashioning new ones. They roll beakfuls of mud and form small pellets which are used along with grass or straw to create

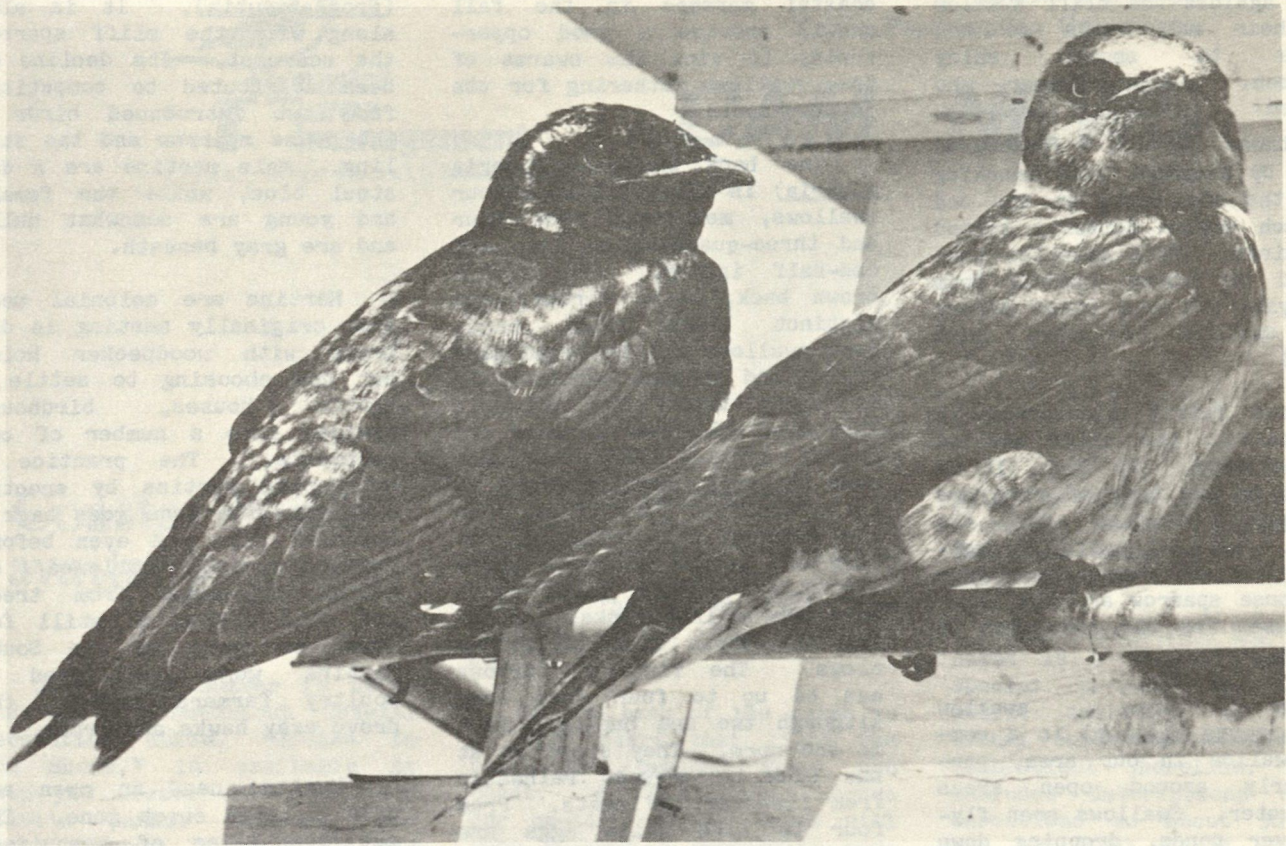
the nest. It is then lined with feathers and hair. Courtship among barn swallows is interesting to watch as they interlock bills and preen one another's plumage.

The female lays from four to six brown-spotted white eggs which are then incubated by both birds for about 15 days. Barn swallows usually raise two broods a year, and the first set of young often help to care for their brothers and sisters. The most graceful of swallows, and fast on the wing, barn swallows have been estimated to cover 600 miles a day during their searches for food for their offspring.

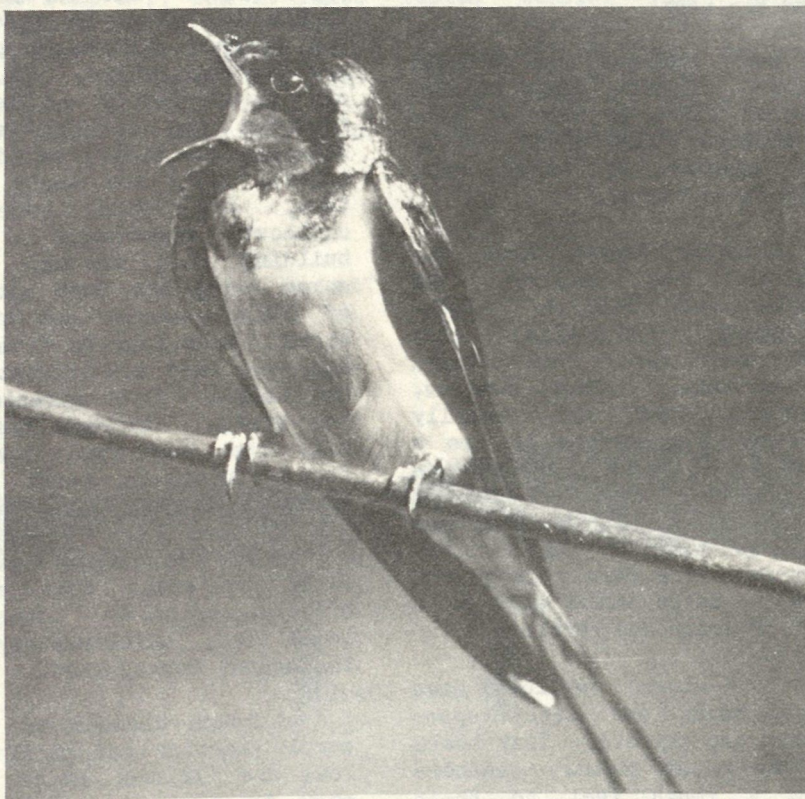
The cliff swallow (Petrochelidon pyrrhonota) is a bird of the open country. It is a sparrow-sized bird, somewhat stocky in shape, and is a dull steely-blue. Its distinguishing marks are the pale buff rump and squared tail. Cliff swallows nest in colonies on mountain walls, overhanging cliffs, or building sides. They build intriguing bottle-shaped nests with small entrances at the tops. The nests are fashioned of mud pellets and lined with feathers. Before putting the roof on the nest, the female lays from four to five brown-spotted white eggs. Cliff sparrows are sociable birds and preen together at dawn gatherings. They travel in flocks, wheeling and crisscrossing as they fly.

Unfortunately, house sparrows have usurped many a cliff swallow nest, after causing the swallows to abandon their colonies. Also, the practice of painting barns and buildings

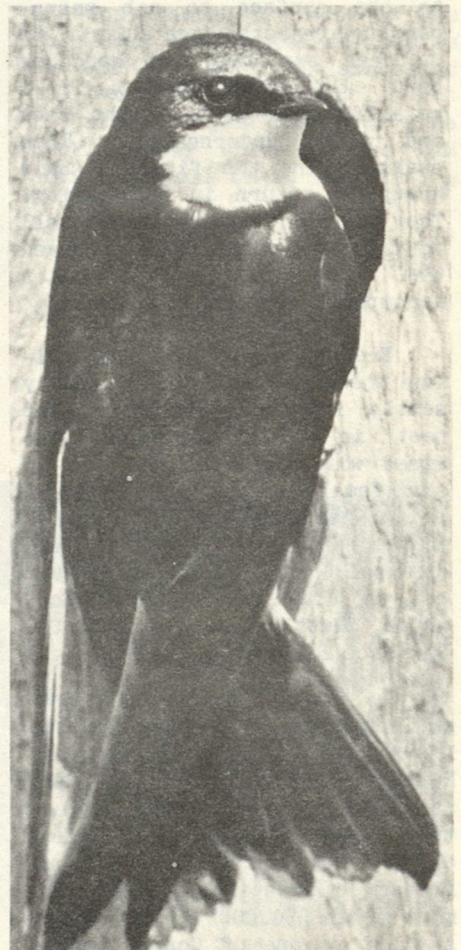
Male & female purple martins: Leonard Lee Rue III



Barn swallow: Leonard Lee Rue III



Male tree swallow: Irene Vandermolen



works against the cliff swallow as their mud nests do not adhere to smooth shiny surfaces. (One farmer who enjoyed the presence of these birds, discovered quite by accident that knocking down the old nests at the end of each season actually helped the birds. This practice prevented the house sparrow from occupying old nest sites before the swallows returned each year.)

Once fairly widespread in Connecticut, the cliff swallow is declining. In fact, it is listed in the book of rare and endangered species for the State. Lack of suitable nesting sites and competition from the house sparrow are the likely causes for the reduction in numbers.

The tree swallow (Iridoprocne bicolor) is a common swallow in our area, particularly around open areas near water. Swallows seen flying over ponds, dropping down to the surface to nab unsuspecting insects, are likely to be tree swallows. A handsome bird, the tree swallow is a metallic blue-green on the back and white underneath. Tree swallows are the first of this group to return in the spring. They feed on bayberries as well as insects, thus can withstand the cold spells that often accompany a Connecticut spring.

Tree swallows nest in hollow trees and will also readily settle into a nest box. The nest is woven of grass and lined with feathers, and in it the female lays from four to six white eggs. They are known to select unusual places, and one pair is reported to have set up house on a ferry boat which shuttled across the St. Lawrence River.

The first to arrive, tree swallows are also the last to leave in the fall. As late as November, tree swallows may still be seen. Prior to migration, tree swallows gather along the coast in enormous flocks, sometimes numbering more than 50,000 individuals. A visit to one of Connecticut's

coastal marshes in the fall should provide a good opportunity to view the swarms of tree swallows gathering for the journey south.

The bank swallow (Riparia riparia) is the smallest of our swallows, measuring from four and three-quarters to five and one-half inches. It has a brown back, white throat, and distinct brown chest band. Bank swallows can be found near rivers and streams particularly if sandy banks are present. They also will nest in sand and gravel pits. The taxonomic name Riparia derives from a Latin word for river bank. In the spring, bank swallows return and search for good nesting sites. These birds actually burrow into banks, loosening the earth with bills and claws. The finished burrows can be up to four feet long although two and one-half feet is the norm. They slope up at the back to prevent rainwater from flooding the nests. From four to five white eggs are laid on a nest of feathers and grass. Both male and female tend the nest.

Bank swallows are colonial nesters, forming colonies of several pairs to several hundred pairs. They often nest in the company of kingfishers, which also burrow.

Slightly larger than the similar bank swallow, the rough-winged swallow (Stelgidopteryx ruficollis) also nests near rivers and streams in burrows. This swallow, however, does not usually excavate and prefers to use a ready-made burrow. Drainpipes and culverts are often used as nest sites. Rough-winged swallows tend to be solitary nesters. The female lays from five to seven white eggs on a nest of grass and rootlets.

Rough-winged swallows have brown backs and dusty upper chests and throats. Tiny hooks on the outer primary feathers give a rough feel to their wings, hence their common name.

The largest swallow in our area is the purple martin

(Progne subis). It is also, along with the cliff sparrow, the scarcest. Its decline has been attributed to competition from two introduced birds -- the house sparrow and the starling. Male martins are a dark steel blue, while the females and young are somewhat duller and are gray beneath.

Martins are colonial nesters, originally nesting in dead trees with woodpecker holes, but now choosing to settle in martin houses, birdhouses divided into a number of compartments. The practice of attracting martins by erecting dwellings for them goes back to Colonial days and even before. Indians used hollowed out gourds suspended from trees, and this custom is still followed in parts of the South. Martins were well-loved by poultry farmers because they drove away hawks and crows.

Martins need an open area with a large swoop zone. They eat quantities of mosquitoes, thus their presence is most appreciated. The martin house should be about 20 feet from the ground. First to arrive are unmated males, who fight over compartments. They are followed by single females. Finally, the older, mated males arrive, evict the early squatters, and take over the choicest apartments. Nest building then ensues. Both sexes bring the nest materials of grass, leaves, and bits of cloth. From four to five white eggs are laid and incubated for two weeks. Both parents tend the young. Extreme heat can kill the nestlings, therefore it is best to paint martin houses white.

Martin sightings are confined to areas that support breeding colonies. These are local and, unfortunately, few throughout Connecticut.

Although chances of seeing purple martins and cliff swallows are limited, it is fairly easy to see other members of the swallow family. Be on the lookout for the different species as summer wanes and fall begins.

CAM NEWS

Coastal Guide available again

Once again summer is here, and CAM's Connecticut Coastal Recreation Guide, "Routes to the Shore," is available to help you locate and enjoy our State's parks, beaches, and boat launches. The guide has roughly the same dimensions as a large road map, and it folds to a size that fits conveniently into a car's glove compartment. The map shows the Connecticut coastal area only and divides the shoreline into

five enlarged insets, or "mini-maps," that highlight the southern border of the State from Route 95 to the water's edge. The major roads are clearly marked and easy to follow.

On the back of the guide is a large chart that lists the parks and beaches along the coast. A quick glance across any section of the chart will show whether a particular recreation spot offers a swimming area, boating ramp, fishing pier, athletic field, campground, picnic area, and restrooms. There is also a short paragraph giving directions to each recreation area, and the

guide provides additional information about entrance fees, telephone numbers, and parking facilities.

The recreation map originated as a Coastal Management special project to increase public awareness of recreational opportunities along the Connecticut shoreline, and it includes descriptions of and directions to about 50 State and municipal parks, beaches, and boat launches. Many of you requested and received copies of the map when we announced its release last summer. But if you don't yet have your free copy, simply write to the CAM office or call us at 566-7114. ■



CAM photo

CAM's Coastal Recreation Guide will make it easier to discover "Routes to the Shore" again this summer.

Greenwoods introduces girls to their natural surroundings

By Susan Subak, Environmental Intern

When leafing through the summer camp advertisements, one finds a growing selection of offerings in such specialties as camps for undereaters, overeaters and underachievers. Summer camps are increasingly becoming specialized training grounds, offering campers an edge in the year-round competition or attention for their year-round problems. It is probably good news to some families, however, that the subject of at least one camp in Connecticut is the countryside itself. Greenwoods Nature & Conservation Camp is not a special camp for "promising," "performing," or "problem," children, but a place where girls, often from the city, come for a week of learning and outdoor activities concentrating on the camp surroundings, and more generally, the camper's relationship to her environment.

Founded in 1965 by the Connecticut State Federation of Women's Clubs, Greenwoods Nature Camp was the first and only camp to teach conservation to girls in the United States.

Each year 80 to 100 girls between the ages of 11 and 14 attend this camp, located at Camp Workcoeman on West Hill Pond in New Hartford.

The campers attend daily sessions related to the surrounding habitat and the ecological process. Topics include: glass recycling, survival skills, energy, gardening, outdoor first aid, the State of Connecticut, elementary meteorology, and conservation. The classes are not confined to a classroom but take place in the camp area and nearby parks. The campers learn from camp volunteers as well as guest instructors. The extensive list of classes may appear somewhat demanding, but the schedule alternates classes with structured and unstructured recreation. For in addition to the educational program, the camp offers periods for swimming, boating, campfires, hiking, a talent show, and movies.

The Connecticut State Federation of Women's Clubs has

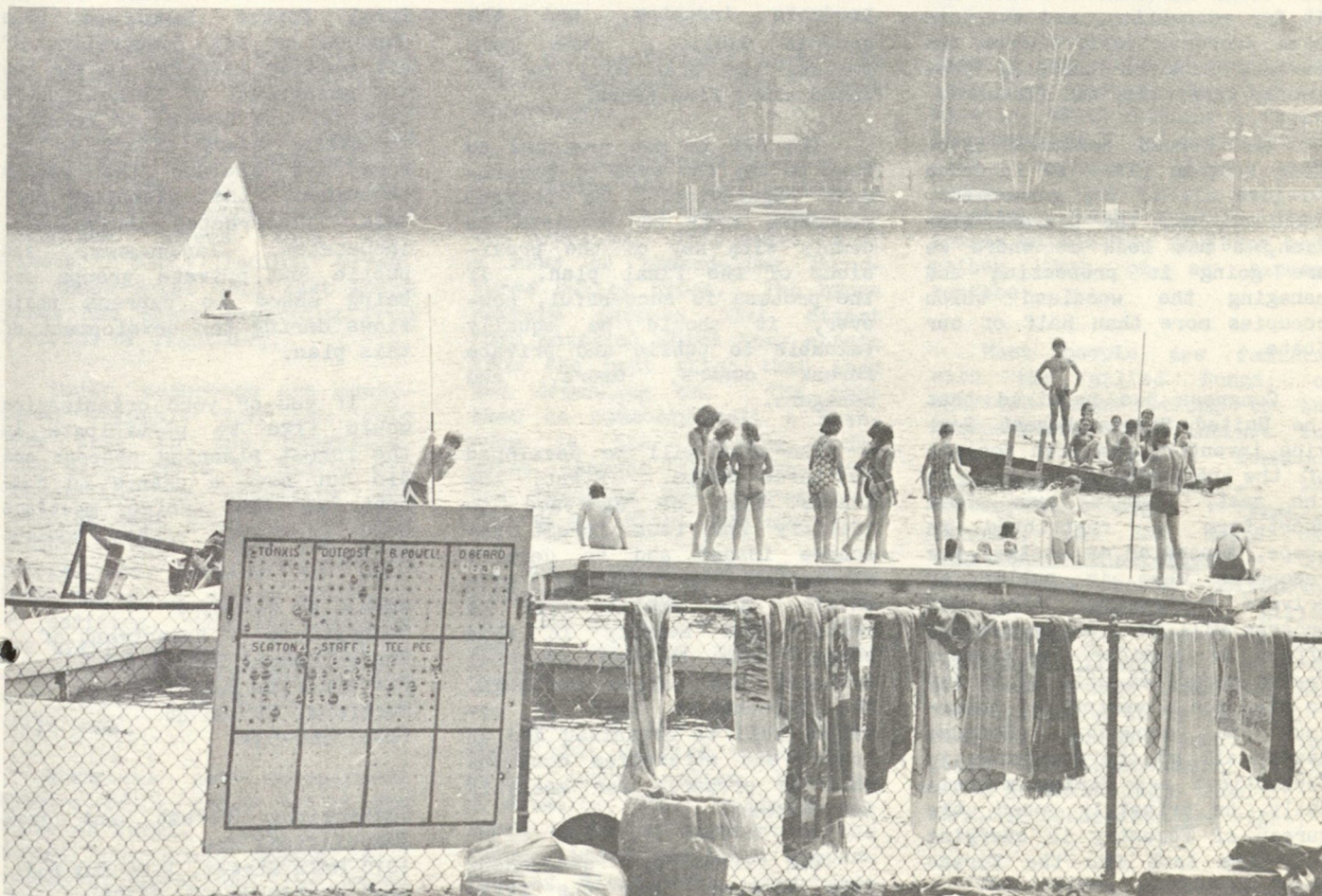
supported the camp since its founding. State federations, such as Connecticut's which has 93 such clubs, are involved in a variety of cultural and social concerns. Greenwoods Nature Camp is the only such state-federation-sponsored nature camp in the United States. The CSFWC and its individual clubs support the camp by sending the girls on "camperships." A camper may also receive sponsorship from interested organizations such as garden clubs, Rotary, and Kiwanis. Some of the campers are on full "camperships," while the remaining pay all or part of the \$100 fee.

William Meo of Waterbury will return this year as camp director. For several years, Meo has shared his outdoor interests at Greenwoods. A former Boy Scout troop leader, he teaches habitat study, gardening, and weather study. Former campers, CSFWC volunteers, and the Boy Scouts of

America Workcoeman staff, will assist the director. Returning campers ages 15 and 16 serve as counselors-in-training, and the more experienced returnees become assistant counselors. Qualified Boy Scouts personnel staff the waterfront, and all swimming is supervised. The Scout Council staffs the dining room and kitchens where balanced meals are served. A nearby doctor is on call and a resident nurse is always on duty.

The goal of the camp is to give the camper a better understanding of her natural surroundings and the future of her environment. Campers agree that Greenwoods is a valuable experience as well as a lot of fun. This year the camp runs from August 7 through August 13. For more information contact:

Mrs. Henry Stoddard
300 Northford Road,
Branford, CT 06405
(203) 488-7740 ■



Gene Gorlick, New Haven Register



By Leslie Bieber,
Citizens' Participation Coordinator

For Your Information

Making a plan for our forests

Approximately 60% of Connecticut is forested -- more than 1,800,000 acres. Many people depend on this resource for their livelihood. More use it for recreation, and everyone uses products derived from the forest, such as building products, furniture, and firewood.

The Forest Resource Planning Program (FRP) is intended to give all of us, government, industry, and the private citizen, a new look at where we are going in protecting and managing the woodland which occupies more than half of our State.

Congress has required that the United States Forest Service inventory and plan for all of the nation's forests. In the past, planning was often short-term or restricted in scope, depending on whether the resources were in public or private ownership. The FRP program will be a comprehensive effort to consider the State's forest resources as a whole and to plan for a variety of interests and concerns. Because nearly all of the woodlands in Connecticut are State, municipally, or privately owned, the Bureau of Forestry is carrying out this task for the Forest Service.

Public funds for forest management and protection have been reduced at both the state and federal levels, but a good plan can help to put available funds to the best uses and most urgent needs. The FRP can also help to resolve the differences of opinion that can occur between professional foresters, private forest owners, government officials, the forest products industry, and the general public. Once completed, the plan will be updated every five years.

The FRP is not designed to lead to any new type of government regulation. No private landowner will be required to comply with any of the provisions of the final plan. If the process is successful, however, it should be equally valuable to public and private forest owners, users, and managers.

The plan will be developed in three steps. First, the issues will be analyzed to identify and rank forest resource issues and to develop strategies for dealing with them. The public will be relied upon heavily in this stage, both through personal contacts and public meetings. The information that is obtained will be organized and an issues and strategies document will be prepared for analysis and review.

The resource assessment step involves both the State

and the U.S. Forest Service, working together to develop a report on current forest resources. Once the report has been issued, it will become the basis for future planning. The final phase of the plan will be its formulation based on the information gathered in the previous steps.

Since the success of the final Forest Resources Plan depends on the cooperation of all parties involved in the use and management of Connecticut's forests, the Bureau of Forestry is making every effort to inform and include the public throughout the planning process. Interested individuals, industries, landowners, and public and private groups are being asked to express their views during the development of this plan.

If you or your organization would like to participate in the forest planning process and did not have a chance to comment at the public meetings held in June, please contact either:

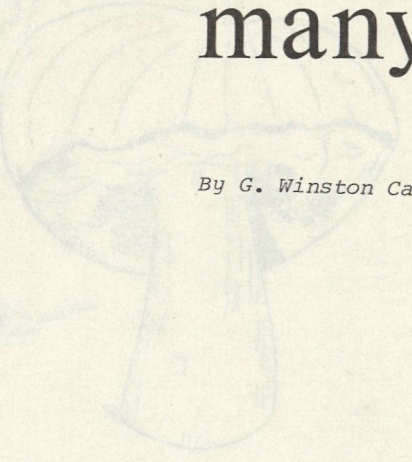
Bureau of Forestry
Connecticut Department of
Environmental Protection
State Office Building
Hartford, CT 06106
(203) 566-5348

or

Connecticut Forest and Park
Association, Inc
1010 Main Street, P.O. Box 8537
East Hartford, CT 06108

Mushrooms may take many forms

By G. Winston Carter



Down through history man has viewed the mushroom in a number of ways. Because they seem to spring up suddenly after lying low, sometimes for years, they probably were credited with more magic and religious powers than most plants. Early Indian, Greek, and Roman myths held that mushrooms had their beginning from a stroke of lightning.

Today, mushrooms are considered valuable for the role they play in the ecosystem. They often serve to hasten decomposition by attacking and breaking down many of our land plants. Also, more and more people are turning to wild mushrooms as a source of food. In addition, mushroom poisons are playing a valuable role as research tools in determining how certain parts of living cells work.

Mushrooms are conspicuous members of a group of plants known as fungi. They are different from green plants in a number of ways, but the major difference is in their inability

to manufacture their own food because they lack chlorophyll.

The underground portion of a mushroom does not contain a root. In its place there is the mycelium. This consists of a mass of thread-like structures called hyphae. The hyphae secrete enzymes that digest food material which they obtain from the host plant that they are depending on. The part that we commonly call a mushroom is the fruiting body, which extends above the soil and contains the reproductive part of the plant, the spores.

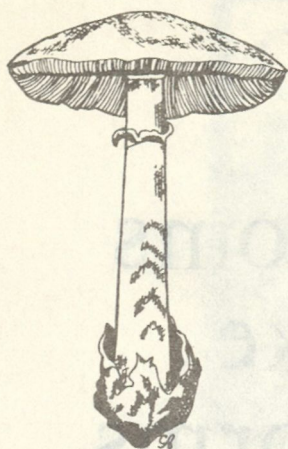
Our typical concept of a mushroom is one with a stalk, cap, and gills, but, as we will see, a mushroom may be many things.

Most of the common mushrooms that we find belong to a major group called basidiomycetes. This grouping is based on the arrangement of the spores, which are borne on protruding microscopic structures known as basidia. The basidio-

mycetes are further subdivided into two groups, the hymenomycetes, which contain a fruiting body with an exposed fertile surface lined with basidia, and the gasteromycetes, which produce their spores within the fruiting body rather than on an exposed surface.

Most people are familiar with the gilled fungi, or agarics, which belong to the hymenomycetes and include the edible meadow mushroom (*Agaricus campestris*), the destroying angel (*Amanita virosa*), and the death cap (*Amanita phalloides*), the latter two being poisonous. Another interesting gilled mushroom is the jack-o'-lantern (*Omphalotus illudens*). A clump of these orange mushrooms has been appearing on my neighbor's lawn in recent years. The gills are luminescent, giving off a greenish light when it is dark, if conditions are right.

The rather variable honey mushroom (*Armillaria mellea*) is



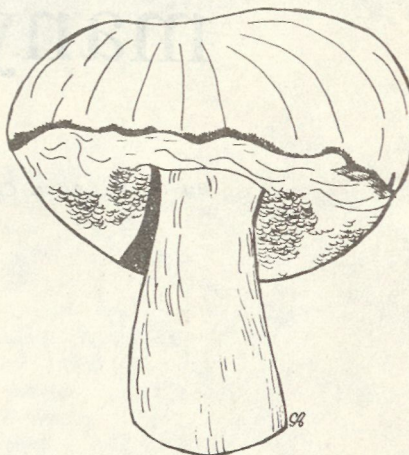
Spring amanita is an example of the gilled fungi, the most familiar of the hymenomycetes.

another species that is worthy of mention. Although usually edible they are capable of doing damage. They produce rather conspicuous string-like mycelia called rhizomorphs, which are often seen attached to trees that have lost their bark and are referred to as "shoe string root rot." Oaks, in particular, are oftentimes victimized with extensive damage as a result. Although the aforementioned gilled mushrooms differ, they all carry their basidia on their gills.

Over 3,000 different kinds of mushrooms have been identified in this hemisphere. Many of them are quite different from the common conception of a mushroom which is the gilled mushroom that I have just been discussing. A mushroom may be a glob of yellow jelly on a log, a series of colorful shelves protruding from a tree, or may even take the shape of branching coral or, strangely enough, a bird's nest complete with tiny round eggs.

One non-gilled group of hymenomycetes is the chate-relles. They have ridges or folds rather than true gills. As the mushroom develops it produces spores on these folds. A typical example of this type of mushroom is Cantharellus cibarius. This is a highly prized edible mushroom.

The boletes and polypores have tubes in place of gills on the underside of the cap. Basidia line the insides of the tubes. Typical boletes are the edible Slippery Jack (Suillus luteus), so called because of its slimy, reddish to yellowish-brown cap, and the old man of the woods (Strobilomyces floccopus), which has a cap covered with coarse wart-like patches.



Bolete members of the hymenomycetes, such as this edible bolete, have tubes in place of gills on the underside of the cap.



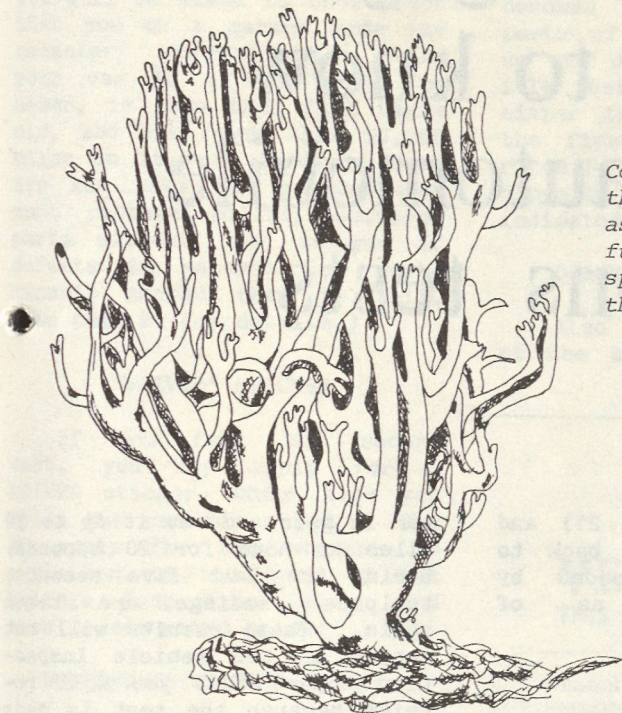
Artist's fungus is a typical polypore member of the hymenomycetes.

Typical polypores are dryad's saddle (Polyporus squamosus) which is common on elms and maple stumps in urban settings, and chicken of the woods, or sulphur shelf (Laetiporus sulphureus), which is a popular edible fungus if collected when not too old. The upper cap or shelf varies from salmon to yellow. Turkey tails (Polyporus versicolor) is so called because of its multi-colored bands of gray or brown on top. It is a small wood-rotting fungus.

The hedgehog mushrooms and their relatives have tightly spaced, needle-like teeth which hang from the underside of the cap in place of gills or tubes. The basidia occur on the teeth. Sweet tooth (Dentinum repandum) has both a cap and a stalk present, but the bear's head tooth (Hericium coraloides) has neither a stalk nor a cap. It consists merely of a whitish mass which is toothed in many small tufts.

The coral fungi are well named because of their resemblance to coral. They are characterized by an upright growth of the fruiting body which is cylindrical or club-like. They may be a single club or a more complex system of branches which are upright. The spore-bearing layer is on the outside surface of the club or stalk, and it has no protection such as a cap. This group of mushrooms varies in color from white to yellow, ochre, orange, red, or purple. Examples of this group are the common crested coral (Clavulina cristata) which is white and the similar gray coral (Clavulina cinerea). This is ash-gray, sometimes tinged with purple.

The common puffballs and their allies serve to introduce the gasteromycetes which produce spores inside the fruiting body. Earthstars (Geastrum sp.) are included in this group, but they have an outer covering which curves back and splits into arms or rays. The spore sac is in the center.



Coral fungi members of the hymenomycetes, such as this straight coral fungus, expose their spores on surfaces of the fruiting bodies.

Most true puffballs are edible before they mature. Puffball steaks fried in batter are delicious. The inside portion of the immature mushroom must be completely white for it to be considered edible. With age, the center changes. The spores are released from a hole in the top. Common puffballs are the gem-studded puffball (*Lycoperdon perlatum*), whose top has detachable, conical spines, and the pear-shaped puffball (*Lycoperdon pyriforme*). The pigskin poison puffball (*Scleroderma citrinum*) is yellowish brown, thick skinned, and warted. Its inner spore mass is purplish-black. This species is not a true puffball and therefore is not edible.

Bird's nest fungi, another intriguing group, look like small birds' nests with eggs inside. These are seed-like cases that contain the spores. These curious fungi are often found growing in wood chips.

The stinkhorns are well named. Their slimy spore mass may be embedded on the top or

head of the stalklike structure. In the case of the stinky squid (*Pseudocolus schellenbergiae*), which I found growing in the wood chips of my flower garden, the arrangement is different. In this species there are three orange arms that are fused at the tip. The

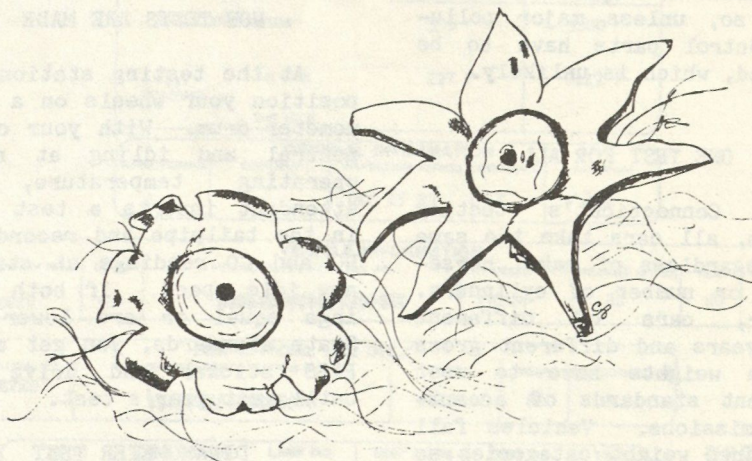
spore mass is embedded along the inner surface of the arms.

The slimy spore mass of stinkhorns attracts flies and beetles because it has the odor of rotting meat. They pick up the spores and carry them on their bodies.

The jelly fungi are sometimes separated into a third classification from the other basidiomycetes because of their gelatinous nature and somewhat different basidia. The spores are borne over the surface of the fruiting bodies. Typical examples are the yellow to orange "witches' butter" (*Tremella mesenterica*), a gelatinous blob that is usually found on logs, stumps, and twigs, and the ear fungus (*Auricularia auricula*), which may also be found attached to a twig. Most of these species fruit in cool moist weather and disappear when it gets dry and warm.

The other major group of mushrooms in addition to the basidiomycetes is ascomycetes. These mushrooms are also classified based on the way they produce their spores. The spores develop within microscopic structures called asci, which vary somewhat but typically are cylindrical or round and sac-like.

To page 24



Earthstar members of the gasteromycetes split open as they mature, discharge spores through top openings.

Everything you wanted to know about automobile emissions tests

By John Waters

If you are getting a bit uptight because the date for your car to take the State's auto emissions test is approaching, this article may help you relax by acquainting you with what really happens at the testing station.

HC AND CO MEASURED

The test measures the hydrocarbons (HC) and carbon monoxide (CO) being emitted by the car's exhaust. If the amount is greater than amounts which the Department of Environmental Protection considers acceptable, you have to take steps to make your emissions comply with its standards. The State does not ask you to spend more than \$70 for necessary adjustments or repairs in order to do so, unless major pollution-control parts have to be replaced, which is unlikely.

ONE TEST FOR ALL

In Connecticut's testing program, all cars take the same test regardless of make, horsepower, or number of cylinders. However, cars of different model years and different gross vehicle weights have to meet different standards of acceptable emissions. Vehicles fall into three weight categories as follows: (1) less than 6,000 pounds; (2) 6,000 to 8,500 pounds; and (3) 8,501 to 10,000 pounds. The acceptable test standards for the year 1983

(see Table I on page 21) and preceding model years back to 1968 will be superseded by stiffer standards as of January 1, 1984.

HOW MEASURED

Computerized test equipment measures HC in parts per million (PPM) in the exhaust. It measures CO as a percentage of the volume of the exhaust sample. Passing score for a 1970 model year car weighing less than 6,000 pounds is 800 PPM of HC and 9 percent of CO. For a 1981 or later model year car, the test is much stricter; namely, 275 PPM of HC and 1.5 percent of CO. In 1984, these two figures will become 220 for HC and 1.2 for CO.

HOW TESTS ARE MADE

At the testing station, you position your wheels on a dynamometer drum. With your car in neutral and idling at normal operating temperature, the attendant inserts a test probe in the tailpipe and records the HC and CO readings at stationary idle speed. If both readings equal or are lower than State standards, you get a blue PASS sticker and drive away until next year's test.

DYNAMOMETER TEST

If the CO and/or HC readings fail to meet State standards, you must then take a dynamometer test. You put the

car in gear and rev it up to 30 miles an hour for 20 seconds. During the last five seconds, tailpipe readings are taken again. These results will not appear on the Vehicle Inspection Report that you will receive because the test is made principally for diagnostic purposes. It helps determine whether an F (fail) score in the first idle test was due to simple causes easily corrected at small expense or due to more complicated mechanical, electrical, or carburetion problems.

The dynamometer test also reactivates pollution control devices turned off while waiting in line, and it blows out the accumulated gases in the system so the engine will operate normally during the second idle test.

SECOND IDLE TEST

Like the first idle test, the second is taken with your car idling in neutral. Because the dynamometer test really warms up the engine, it is quite possible that you will now make a passing score on CO and HC readings. If that happens, you will get a blue PASS sticker and drive away happy. If you still get one or two F scores, you are allowed 30 days to have the condition corrected before reporting for a second round of testing, which is free. You are not required to spend more than \$70

for service unless pollution-control parts are replaced. You will be asked to show proof that you or a garage made the necessary corrections. (If your car is a 1981 model or newer, is less than five years old, and has fewer than 50,000 miles on it, the Federal Clean Air Act says the manufacturer must replace pollution-control parts without cost to you if defects in material or workmanship caused them to fail. See page 21 for details.)

"WAIVED" STICKER

If you fail the second test, you may apply for a WAIVED sticker, which lets you drive the car for a year. How to apply for the sticker is explained on the back of the Vehicle Inspection Report and also is described below.

UNDERSTANDING TEST REPORT

At the end of the \$10 test, you are handed the Vehicle Inspection Report form, the first side of which is shown in Figure I. The parts of it that you need to understand are mostly in the boxes headed "Idle Emission Data" and "Diagnostic Codes." The first line down from the heading, "Idle Emission Data," has two abbreviated subheads: HC (PPM) and CO (%).

The first line at the left reads "State Standards." Because 1980 was the model year of the vehicle tested in this report, 350 appears under HC, and 3.0 under CO. These figures are taken from Table I, which lists the emission limits for various model years.

Going down another line, "Test Reading" appears at the left, with "1st Idle" and "2nd Idle" to the right of it. Under 350 is 227 with a P after it (P means Passed). Under 3.0 is 0.47 with a P after it (if an F appears after a number, it means failed).

If you have to take your car back for retesting, you will receive another Vehicle Inspection Report with the results of the free test on it.

In Figure I, no readings are given opposite 2nd Idle because the car passed both parts of the first idle test, so no dynamometer and second idle tests were necessary. If either the HC or CO score in the first idle test had been rated F, there would be numbers opposite 2nd Idle, with P or F indicated.

DIAGNOSTIC CODE NUMBERS

Also on page 1 of the form, at the upper right, is a box

headed "Diagnostic Codes." If a car has met the HC and CO standards in the stationary idle test, the box will be left blank, as in Figure I. But if it failed to meet either standard or both, the box will contain the numeral 1 or 2 or both. If in the dynamometer test the car showed high HC, high CO, or both, the numeral 3 and/or 4, indicating possibly serious trouble, will also appear in the box, along with 1 and/or 2. These numbers are discussed in a Diagnostic Code

Figure I

STATE OF CONNECTICUT 905418 VEHICLE INSPECTION REPORT

THIS REPORT IS REQUIRED IN ORDER TO RECEIVE A FREE RETEST.
IF LOST OR STOLEN IT CAN NOT BE REPLACED.

Pursuant to Sec. 14-164C of the Connecticut General Statute, Motor Vehicle Emissions Systems and Inspection Facilities, your vehicle was inspected for exhaust emissions. If the results are PASS, the new sticker on the windshield shows the last day of the 2 week period for the next annual test. If the results are FAIL, the law provides 30 days to accomplish repairs and to return (with the reverse side of this form completed) for one no-charge retest.

Hydrocarbons (HC) are unburnt gasoline and cause smog. Carbon Monoxide (CO) is a colorless, odorless, toxic gas. Excessive levels of these pollutants are caused by engine malfunctions which cause poor gas mileage and shorten engine life.

NOTICE: This report must accompany the vehicle at the time of reinspection.

FINAL RESULT PASS	FEE 10	STICKER PASS 84	DIAGNOSTIC CODES			
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IDLE EMISSION DATA			
	HC (PPM)	CO (%)	
STATE STANDARDS	350	3.00	
TEST READING	227 P	0.47 P	
	2nd IDLE		

GENERAL INFORMATION				
INSPECTION NO.	CUSTOMER	INSPECTION PERIOD	INSURANCE	TAX TOWN
1		DEC 15 83	Y	111

VEHICLE INFORMATION						
REGISTRATION NO.	CLASS	VEHICLE IDENTIFICATION NO.	MAKE	MILEAGE (X1000)	YEAR	WT. CODE
STEVEN	50	*****	TRIUM	80	80	0

FOR OFFICIAL USE ONLY				
REGISTRATION NO.	VEHICLE IDENTIFICATION NO.	MAKE	YEAR	INSPECTION NO.
STEVEN	*****	TRIUM	80	1

DATE	STATION NO.	LANE NO.	TEST MODE	TEST NO.	TIME
12/14/83	HG	2	S	1	19:50

DIAG. CODE	CKSUM	RPN	TPN	PPN	STICKER PERIOD
	-8070	12345		111111	DEC 15 84

905418

Explanation on page 2 of the form.

HELPS TO PINPOINT CAUSES

The "Diagnostic Code Explanation" from the back page of the Inspection Report form, is shown in Figure II. If you flunked any part or all of the \$10 test or the free second test, information in the box headed "Diagnostic Code Explanation" describes conditions that might be causing the trouble. At the top right of the box, you will see four numbered phrases:

1. High CO at idle
2. High HC at idle
3. High CO at conditioning mode
4. High HC at conditioning mode

One or more of these numbers will have been filled in, under "Diagnostic Codes," in the box at the upper right of page 1. ("Conditioning mode" simply means the dynamometer test.)

CIRCLED NUMBERS

The number or numbers you find circled on page 2 refer to parts of the tests the car failed. They also guide you to the four lists of "Common Causes of Failure." For example, if Code 1 and/or Code 2 are circled, refer to the first code list with 1 or 1,2 alongside it. This list gives four possible causes (a,b,c,d). One or more of these letters may be

checked to suggest the most likely cause of the trouble.

If only code 2 is circled, refer to the second list, the one with 2 alongside it.

The causes of Code 3 or Code 4 failures are given in the third and fourth lists in the right-hand column. In the combinations of code numbers alongside them, find the numbers checked on your sheet and read the probable causes indicated by the letters, "a," "b," "c," and "d."

WAIVER APPLICATIONS

Also on page 2 are the requirements for obtaining a WAIVED sticker if your car failed to pass its retest. The information is contained in boxes headed "Waiver Requirements" and "Repair Data."

The first requirement is that the following seven items under "Repair Data" be checked and repaired or adjusted if necessary. These are:

1. Check idle speed and set it to manufacturer's specifications. Indicate what it is in r.p.m. after servicing.
2. Check and adjust the idle air-fuel mixture, using the manufacturer's recommended procedures.
3. Check for vacuum leaks. After repairing them, readjust the idle mixture and idle speed.
4. Check the choke to find

out whether it is operating properly. If not, have it repaired.

5. Check the PCV valve. Replace it if necessary.
6. Check the air filter to make sure it is not clogged with dirt. Replace it if necessary.
7. Check the dwell and ignition timing and reset them to the manufacturer's specifications if necessary.

REPAIRER'S STATEMENT

In addition, obtain a statement from a licensed repairer that emission-related repairs -- excluding air pollution control devices -- totaling more than \$70 would be required to bring the vehicle into compliance with State standards.

Submit your first and second Vehicle Inspection Reports and the statement supplied by the repairer to the Motor Vehicle Department's field representative on duty at the inspection station that made the tests.

In addition, the State may inspect the vehicle to verify that repairs were made, check for the presence of properly connected air pollution control devices, or determine whether additional repairs are needed. It may also require additional repairs which the various conditions listed in the "Diag-

Figure II

DIAGNOSTIC CODE EXPLANATION			
CODE	COMMON CAUSES OF FAILURE (most probable cause listed first)	CODE	COMMON CAUSES OF FAILURE (most probable cause listed first)
1 OR 1, 2	<ol style="list-style-type: none"> a. Incorrect idle mixture and speed b. Restricted air intake (air cleaner, choke, air intake doors, etc.) c. Plugged PCV system d. Vacuum leaks (hoses, manifold, etc.) NOTE: Readjust idle mixture and speed after repairing vacuum leaks.	1, 3 1, 4 1, 2, 3 1, 2, 4 1, 3, 4 OR 1, 2, 3, 4	<ol style="list-style-type: none"> a. All items listed under Code 1 b. Internal carburetion or fuel injection problem (high float level, oversized jets, power enrichment, etc.) c. Computer controlled closed loop carburetion problem (oxygen sensor, etc.) - 1981 and newer vehicles only
2	<ol style="list-style-type: none"> a. Vacuum leaks (hoses, manifold, EGR valve, carburetor, etc.) NOTE: readjust idle mixture and speed after repairing vacuum leaks. b. Ignition system malfunction (plugs, plug wires, points, dwell angle, etc.) c. Incorrect ignition timing and idle speed 	2, 4 2, 3 2, 3, 4	<ol style="list-style-type: none"> a. Items listed in code 2 b. Mechanical engine problem (valves, rings, sticking EGR, heat riser, plugged exhaust, etc.) a. Items listed under Code 2 b. Items listed under Code 1, 3 a. Items listed under Code 2, 4 b. Items listed under Code 1, 3

WT. CODE

0 - UP TO 5999 LBS.
 1 - 6000 TO 8500 LBS.
 2 - 8501 TO 10,000 LBS.

Table I

1983 INSPECTIONS Gross Vehicle Weight*

Model Year**	Less Than 6,000 Pounds		6,000-8,500 Pounds		8,501-10,000 Pounds	
	HC (PPM)	CO (Vol. %)	HC (PPM)	CO (Vol. %)	HC (PPM)	CO (Vol. %)
1968-1969	950	9.5	1,050	8.5	1,275	10.5
1970	800	9.0	875	7.0	1,050	8.0
1971	800	7.5	875	7.0	1,050	8.0
1972	725	7.5	875	7.0	1,050	8.0
1973	525	7.5	875	7.0	1,050	8.0
1974	525	7.5	625	5.0	750	6.0
1975-78	375	4.0	625	5.0	750	6.0
1979	375	4.0	375	4.0	450	4.5
1980	350	3.0	350	3.0	450	4.5
1981 and later	275	1.5	275	1.5	450	4.5

* Where the Gross Vehicle Weight cannot be determined, the emission standards for vehicles of gross vehicle weight of less than 6,000 pounds shall apply.

** Where the Model Year cannot be determined, the emission standards for Model Year 1968 shall apply.

nostic Code Explanation" on page 2 make necessary, or other repairs, up to a limit of \$70.

GENERAL ADVICE

You may have your car tested at any of the 18 inspection stations in the State. The fee for the initial test is \$10, payable in cash only before the test is started. There is no charge for the retest if one is necessary.

There is a fine of up to \$100 and possible loss of your registration if you fail to make the test.

The date on the sticker for not-yet-tested cars is the last date (not the first) in the 15-day period during which your car can be tested. Don't wait that long. The lines are shorter and faster during the middle days of a test period.

The test itself takes about six minutes.

If the 15-day period assigned to you is inconvenient or impossible to keep, the Department of Motor Vehicles will give you a different date if you have a good reason. Phone 566-4436 or 1-800-842-8222 to make the request. Call as far in advance as possible. The DMV will mail you a sticker with the new date on it, without charge.

These are also the numbers to call to register a complaint about a dealer or repairer, or discuss a waiver, although it is better to discuss a waiver with the representative of the Motor Vehicle Department on duty at the testing center you used.

Be sure you have your registration and your proof of

car insurance with you when you go for the test.

If you have to come back for a retest, be sure to have the "Vehicle Inspection Report" of the first test with you to turn over to the Motor Vehicle Department's representative at the testing station.

TELEPHONE INFORMATION

If you do not understand your Vehicle Test Report, or if you want other information about the testing system, or if you want to find out the location of a testing center and how to get to it, call 1-800-842-2000, which is the number of the Hamilton Standard subsidiary that conducts the tests as a contractor for the State.

All phone numbers mentioned here are almost continuously busy, so don't wait until the last minute if the matter is important. Start calling a day or two ahead of time.

The Motor Vehicle Department headquarters is at 60 State Street, Wethersfield, CT 06109. Its offices are open Tuesday, Wednesday, Friday, 8:30-4:30; Thursday, 8:30-7:30; Saturday, 8:30-12:30. They are closed on Mondays.

If emissions
equipment
makes car
flunk,
repair or
replacement
must be free

The United States Clean Air Act protects car owners by stating that if your car fails to meet federal emissions standards because of a material

or workmanship defect in original emissions control equipment, the car manufacturer must repair or replace the part if the car is less than five years old and has fewer than 50,000 miles on it.

The warranty applies to all cars, pickups, recreational vehicles, heavy-duty trucks, and motorcycles made since 1972. The owner's manual or some other document must call attention to the existence of the warranty and explain its terms. For example, using leaded gas in a car requiring unleaded will void the warranty.

Furthermore, you must not be charged for any parts or miscellaneous items needed to complete the repair. If, for instance, a catalytic converter is replaced, you should not be charged for the catalyst, pipes, brackets, adjustments, or labor. To qualify for warranty coverage, you must maintain the vehicle according to the manufacturer's instructions.

If your car is within the stated time and mileage limits, the warranty applies whether you bought it new or used, and regardless of whether it was bought from a dealer or somebody else.

PARTS COVERED BY WARRANTY

The warranty covers two groups of parts: (1) those whose primary purpose is to control emissions; and (2) any other parts that significantly affect emissions.

LIMITED WARRANTIES

Certain parts are not covered by the full time-and-mileage warranty. They are parts that the manufacturer's maintenance instructions say should be replaced at specified intervals, such as "every 12 months" or "every 10,000 miles," etc. In other words, they are warranted only up to the time of their first

replacement. On the other hand, the full-period warranty coverage applies to parts which the maintenance instructions tell you to check and replace if necessary.

MAKING WARRANTY CLAIMS

You are not required to show maintenance receipts when you make a warranty claim. You may be asked for proof that the scheduled maintenance was performed only if lack of it could have caused the part to fail.

If your dealer turns down your first request for warranty coverage, ask for a complete explanation in writing and for the names of persons involved in the denial, including any from the factory's regional or zone office. With this information in hand, contact the person whom your owner's manual or warranty booklet says you should appeal to.

LAST RESORT: EPA

If you cannot get satisfaction from anybody, write to:
Warranty Complaint
Director, Mobile Source
Enforcement Division (EN-340)
U.S. Environmental Protection Agency
Washington, D.C. 20460

Much of the information in this article came from an excellent free leaflet issued by EPA, "What You Should Know About Your Auto Emissions Warranty" OPA 49/9.

Low cost, easy repairs correct most failures

Connecticut's auto emissions testing program got off to a somewhat stormy start. The Department of Motor Vehi-

cles found that one car dealer was adding \$37 to the price of brand new cars as a fee for "preparing" them for the test. He was doing so in spite of federal regulations stipulating that a new car may not be sold unless its carbon monoxide (CO) and hydrocarbon (HC) emissions meet EPA standards and that any costs involved in making it do so must be passed along to the manufacturer if the model year is 1981 or newer (see page 21).

Then a West Hartford station revealed that some owners of cars which failed the initial \$10 emissions test were getting ripped off at a surprising number of dealers and independent auto repair shops. Charges ran from more than \$100 to under \$20 for adjustments or easy replacement of inexpensive parts that would insure passing when the car was retested. The State immediately cracked down on such practices.

THE ENEMIES: CO AND HC

The testing program detects and measures excessive carbon monoxide (CO) and excessive hydrocarbons (HC) in the exhausts of gasoline-powered cars and trucks.

CO is always caused by not enough air (or too much gasoline) in the gas-air mixture fed to the engine. Carburetor and air-intake systems are always the cause.

HC is unburned gasoline in the exhaust and is often caused by ignition system problems. Overly advanced timing increases HC. Low idle speed or a rich idle mixture increases both HC and CO.

MVD SUGGESTIONS

To help prevent needless replacement of parts because the above-mentioned causes of emission-test failures are not understood, the Motor Vehicles Department offers the following suggestions on what to do -- and what not to do -- to correct the four types of test failures that occur. The four types are described as Code 1, Code 2, Code 3, and Code 4 failures.

This information may help car owners to evaluate a repairer's diagnosis and will aid do-it-yourselfers in selecting the right cures.

CARBON MONOXIDE

Code 1 and Code 3 failures are due to excessive amounts of carbon monoxide (CO) in the exhaust when the engine is idling. Code 1 failures are detected when the engine is idling in neutral. Code 3 failures are detected when the wheels are spinning on a dynamometer.

HYDROCARBONS

Code 2 and Code 4 failures are due to excessive amounts of hydrocarbons (HC) in the exhaust when the engine is idling; Code 2 failures are detected when it idles in neutral; Code 4 failures are detected when the wheels spin on a dynamometer.

CODES ON REPORT FORM

The code numbers indicating the type or types of test failure in a given car will be found printed in a box headed "Diagnostic Codes" on page 1 of a "Vehicle Inspection Report" that is given to the operator of the vehicle tested. On the back of the form, the code numbers are explained and cross-referenced to tables of suggestions for pinpointing the cause or causes of the trouble. Refer to Figure II on page 20. The following descriptions elaborate on the suggestions.

CODE 1 SERVICE

If code number 1, or code numbers 1 and 2, appear in the "Diagnostic Codes" box on the form, a simple adjustment of idle mixture or idle speed will remedy almost all cases of failure. All carburetors are adjustable, so new or rebuilt ones are almost never needed.

If the problem still exists after the idle adjustments, inspect the air intake system (air doors, air cleaner, choke, etc.) and PCV system. Check

for and correct vacuum leaks. Readjust the idle mixture if the vacuum leaks have been repaired.

Although rarely needed, adjustments on 1981 or newer cars can usually be done by the dealer at no cost to the owner, thanks to the Emissions Performance (207 B) Warranty. See article on page 21.

New spark plugs, wires, or other ignition system repairs have no effect on Code 1 failures. It is extremely unlikely that a new catalytic converter or an EGR valve is needed.

CODE 2 SERVICE

For a Code 2 failure, new or rebuilt carburetors or catalytic converters are almost never needed. The most common problems are vacuum leaks, incorrect engine timing (usually overly advanced), incorrect idle speed (usually too low), incorrect carburetor idle mixture (too lean or too rich), or faulty spark plugs and wires.

Inspect for vacuum leaks first. If the problem continues, adjust ignition timing and idle speed. Next, if hydrocarbon level still is high, adjust the idle mixture. If there is no improvement, repair or replace plugs, wires, or other ignition parts as necessary.

CODE 3 SERVICE

If in addition to a 1 in the box headed "Diagnostic Codes" there is a code number 3, it may indicate a more serious carburetor problem. Often, however, the simple idle adjustments mentioned for Code 1 service will work. If not, the vehicle may qualify for a WAIVED sticker. See page 20.

Remember, too, that since the State does not require an owner to spend more than \$70 for reducing emissions, buying a new or rebuilt carburetor will seldom be necessary. Car makers' warranties may cover these repairs on newer cars.

If in addition to a 2 in the "Diagnostic Codes" box

there is a code number 3, but no code number 1, make the repair as if it were a Code 2 failure. If this does not work, the vehicle may qualify for a WAIVED sticker. See page 20 for how to apply for sticker.

CODE 4 SERVICE

If there is a 4 among the other numbers in the "Diagnostic Codes" box, it may indicate more serious engine problems such as worn valves or piston rings. However, most Code 4 failures can be remedied with new plugs, wires, other electrical system repairs, or a carburetor adjustment.

SUMMARY

When more than one code number appears in the "Diagnostic Codes" box on page 1 of the Vehicle Inspection Report, start with the simplest checks and repairs, which are those suggested for the lowest code number listed. Then proceed in numerical order.

For example, if 1, 2, 3, and 4 appear in the box, the checks and repairs suggested for Code 1 on page 2 of the inspection report should be made first; then those for codes 2, 3, and 4, in that order.

Code 3, if listed, may mean that more extensive carburetor repairs are needed. If Code 4 is listed, extensive mechanical repairs may be needed if simple repairs won't work.

If your repaired vehicle fails reinspection and the "Diagnostic Code" has a 3 and/or 4 in it, you may qualify for a WAIVED sticker.

OTHER INFORMATION

For details on how the tests are conducted and scored; on what it is necessary for you to do; on what to do if you fail; and other useful information, see the article on page 18 of this issue. For information on the federally mandated free replacement of pollution-control parts by car manufacturers, see page 21. ■

Mushrooms

From page 17

This group includes the highly regarded morels, false morels, cup fungi, and a wide range of minute fungi that cause plant and animal diseases such as Dutch elm disease and chestnut blight. Most of these are so small that we rarely see them; however, some of the more conspicuous ones will be mentioned. These will be the morels, false morels, and the colorful cup fungi.

The true morels are a favorite of mushroom hunters. They are only found in the spring of the year. The fertile expanded head or brown top of these mushrooms is usually characterized by having the asci, which are filled with spores, located in pits rather than on a wrinkled fertile head, as is the case in the false morels. An example of an edible true morel is the yellow morel (Morchella esculenta). The brain morel (Gyromitra esculenta) is a false morel that should not be eaten because of its poisonous qualities.

The cup fungi usually have their asci lining the inner surface of the upper surface of what is usually a cup or saucer-shaped fruiting body. An example of a cup fungus is the scarlet cup (Sarcoscypha coccinea). This is interesting because it is one of the first mushrooms to appear in the early spring. It has a small red cap with a white outer surface.

In the Northeast, mushroom season begins in late April and continues well into the fall.

Those who wish to collect mushrooms will find that a market basket, a trowel or hunting knife, and waxed paper bags, to prevent sweating, are all useful items. When collecting it

is important to note the habitat where the collection was made, e.g., lawn, meadow, forest, and the growth habit, e.g., growing on a tree or stump, on the ground, in clusters, or singly, and so on.

In order to make accurate identification of many mushrooms, it may be necessary to make spore prints. Most mushroom guides will explain how to do this. Further information can be obtained by examining the spores under a microscope or even using chemical tests. However, you can learn many mushrooms just by observing them in the field. ■

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Puffballs are among the gasteromycetes, which produce spores inside fruiting bodies.

DEP Citizens' Bulletin

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Department of Environmental Protection
State Office Building
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